Field network system with minimal wiring

NETWORK

Applicable controllers ▶ ERCX SR1-X SR1-P DRCX

CC-Link

- Option unit with networking functions that can be incorporated in YAMAHA robot controllers, ERCX / SR1-P / SR1-X / DRCX.
- As connection of the robot system and the sequencer requires only one (4-wire) dedicated cable, it is possible to save wiring of the entire system, which contributes to efficient wiring work, reduction of installation and maintenance costs, etc.
- Available I/Os are 32 general inputs / outputs and 16 dedicated inputs / outputs (2 nodes occupied).
- It is possible to perform position specification movement and data reading / writing directly by using the remote commands.

Basic specifications for network modules CC-Link

Item	Network modules CC-Link
Applicable controllers	ERCX / SR1-P / SR1-X / SRCP30 / DRCX
Version supporting CC-Link	Ver. 1.10
Remote node type	Remote device node
Number of occupied nodes	Two nodes fixed
Node number setting	1 to 63
Communication speed setting	10Mbps, 5Mbps, 2.5Mbps, 625Kbps, 156Kbps
No. of CC-Link I/O Note1	General input 32 points, General output 32 points, Dedicated input 16 points, Dedicated Output 16 points
Parallel external I/O (ERCX, SRCP30, DRCX only)	All points usable as parallel external I/O for controller. Each point controllable from master station sequencer (PLC) by emulated serialization, regardless of robot program.
Shortest distance between nodes Note2	0.2m or more
Overall length Note2	100m/10Mbps, 160m/5Mbps, 400m/2.5Mbps, 900m/625Kbps, 1200m/156Kbps
Monitor LED	RUN, ERR, SD, RD

Note 1. Controller I/Os are updated every 10ms.
Note 2. These values apply when a cable that supports CC-Link Ver 1.10 is used.

DeviceNet

- Option unit with networking functions that can be incorporated in YAMAHA robot controllers, ERCX / SR1-P / SR1-X / DRCX.
- As connection of the robot system and the sequencer requires only one (5-wire) dedicated cable, it is possible to reduce wiring of the entire system, which contributes to efficient wiring work, reduction of installation and maintenance costs, etc.
- Available I/Os are 16 general inputs / outputs and 16 dedicated inputs / outputs.
- It is possible to perform position specification movement and data reading / writing directly by using the remote commands.(SR1-X only)

Basic specifications for network modules DeviceNet

Item		Network modules DeviceNet
Applicable controllers		ERCX / SR1-P / SR1-X / SRCP30 / DRCX
Applicable DeviceNet specifications		Volume 1 Release2.0/Volume 2 Release2.0
Device type		Generic Device (device number 0)
Number of occupied CH		Input 2ch Note1, Output 2ch Note1
MAC ID setting		0 to 63
Communication speed setting		500Kbps, 250Kbps, 125Kbps
DeviceNet I/O Note2		General input 16 points Note3, General output 16 points Note3, Dedicated input 16 points, Dedicated Output 16 points
Parallel external I/O (ERCX, SRCP30, DRCX only)		All points usable as parallel external I/O for controller. Each point controllable from master station sequencer (PLC) by emulated serialization, regardless of robot program.
Network length	Overall length Note4	100m/500Kbps, 250m/250Kbps, 500m/125Kbps
	Branch length/Overall branch length	6m or less/39m or less, 6m or less/78m or less, 6m or less/156m or less
Monitor LED		Module, Network

Note 1. Inputs / Outputs are 12ch each when using SR1-P / SR1-X with extension model.
Note 2. Controller I/Os are updated every 10ms.
Note 3. General Inputs / Outputs are 32 each when using SR1-P / SR1-X with extension model.
Note 4. These values apply when a thick cable is used. The distance is less when a fine cable is used or when thick and fine cables are mixed in use.

Profibus

- Option unit used to connect a YAMAHA robot controllers ERCX / SR1-P / SR1-X / DRCX to Profibus.
- Optimum for high speed data communication and complicated communication processing.
- Communication is made available among devices of multiple number of manufacturers.
- It is possible to perform position specification movement and data reading / writing directly by using the remote commands.

Basic specifications for network modules Profibus

Item	Network modules Profibus
Applicable controllers	ERCX / SR1-P / S R1-X / SRCP30 / DRCX
Communication profile	Profibus-DP slave
Number of occupied nodes	1 node
Setting of station address	0 to 126
Communication speed setting	9.6Kbps, 19.2Kbps, 93.75Kbps, 187.5Kbps, 500Kbps, 1.5Mbps, 3Mbps, 6Mbps, 12Mbps (automatic recognition)
Profibus I/O Note	General input 32 points, General output 32 points, Dedicated input 16 points, Dedicated Output 16 points
Parallel external I/O (ERCX / DRCX only)	All points usable as parallel external I/O for controller. Each point controllable from master station sequencer (PLC) by emulated serialization, regardless of robot program.
Overall length	100m/12Mbps, 200m/1.5Mbps, 400m/500Kbps, 1000m/187.5Kbps, 1200m/9.6K · 19.2K · 93.75Kbps

Note. The shortest I/O update interval of the controller is 10ms but the actual I/O update time varies depending on the update time with the master station.

Ethernet

- Option unit used to connect a YAMAHA robot controller to Ethernet, which can be incorporated in YAMAHA robot controllers, ERCX / DRCX. Connection of this unit to the network operation by the TCP/IP protocol with a 10BASE-T cable makes data exchange with a robots easy.
- Capable of making an easy access from the TELNET terminal to the robot controller. As the command system is the same as that by the RS-232C communication, even first-time users can use it easily. (Windows PCs have a built-in TELNET terminal called TELNET.EXE as a standard equipment.)
- With a number of controllers connected in the network, it is possible to perform integrated information control over robots even at a distance from the work site.

Basic specifications for network modules Ethernet

Item	Network modules Ethernet
Applicable controllers	ERCX / SRCP30 / DRCX
Network specification	As specified for Ethernet (IEEE802.3)
Connector specification	RJ-45 connector (8-pole modular connector) 1 port
Baud rate	10Mbps (10BASE-T)
Communication mode	Half Duplex (Half-duplex)
Network protocol	Application layer: TELNET / Transport layer: TCP / Network layer: IP, ICMP, ARP / Data link layer: CSMA/CD / Physical layer: 10BASE-T
Number of simultaneous log inputs	1
Setting of IP address, etc.	Set from HPB / HPB-D
Monitor LED	Run, Collision, Link, Transmit, Receive